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16 November 2000

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The Assistant Commissioner of Patents
Washington, D.C. 20231

Attorney Docket No.: P56107

Sir:

Submitted herewith is the following patent application:

Inventor: **WOON-IL KIM**

Title: **SYSTEM AND METHOD FOR CONTROLLING A PRINTING DEVICE**

Please find attached hereto an application for patent which includes: Specification and Abstract, Claims, and a certified copy of the foreign priority document identified below:

Verified Showing of Small Entity Status: **NO**

Drawings: Formal drawings, 6 sheets, Figures 1 through 6

Claim of priority under 35 U.S.C. §119: **YES**

REPUBLIC OF KOREA Application No. 99-51744 filed in Korea on 20 November 1999

Fee (see formula below): **CHECKS ARE ENCLOSED**

Basic Fee $355/710.....$710.00

Additional Fees:

Total number of claims in excess of 20: 3 times $9/18.....$54.00

Number of independent claims in excess of 3: 0 times $40/80.....$0.00

Multiple dependent claims $135/270.....$0.00

An Assignment is likewise enclosed: Recording Fee $40.....$40.00

Filing Non-English specification.....$0.00

TOTAL FEES FOR THE ABOVE APPLICATION.....$804.00

Inventor: **WOON-IL KIM**

Title: **SYSTEM AND METHOD FOR CONTROLLING A PRINTING DEVICE**

Should the enclosed check become lost or detached from the file, the Commissioner is authorized to charge for any additional charges incurred, or credit any excess payment to the Deposit Account No. 02-4943. Kindly notify the undersigned attorney of any transaction regarding our Deposit Account.

In view of the above, it is requested that this application be accorded a filing date pursuant to 37 CFR 1.53(b).

Please address all corresponding to :

Robert E. Bushnell
1522 K Street, N.W., Suite 300
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Respectfully submitted,

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I.D.: REB/sys

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FEE TRANSMITTAL

Patent fees are subject to annual revision.

Complete If Known	
Application Number	*to be assigned*
Filing Date	16 November 2000
First Named Inventor	WOON-IL KIM
Examiner Name	*to be assigned*
Group/Art Unit	*to be assigned*
Attorney Docket No.	P56107

TOTAL AMOUNT OF PAYMENT	($) 804.00

METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 02-4943
Deposit Account Number: _____

☐ Charge Any Additional Fee Required Under 37 C F R §1.16 and 1.17.

☐ Applicant claims small entity status. See 37 CFR 1.27

2. ■ **Payment Enclosed: (CHECKS #37669 & #34670)**

■ Check ☐ Credit Card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	$ 710 00
106	320	206	160	Design filing fee	$
107	490	207	245	Plant filing fee	$
108	710	208	355	Reissue filing fee	$
114	150	214	75	Provisional filing fee	$

SUBTOTAL (1) ($) 710 .00

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total claims	23	-20** =	3	x	18	=	54
Independent Claims	3	- 3** =	0	x	80	=	0
Multiple Dependent						=	

*** or number previously paid, if greater, For Reissues, see below*

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	**Claims in excess of 20**
102	80	202	40	**Independent claims in excess of 3**
104	270	204	135	**Multiple dependent claim, if not paid**
109	80	209	40	**** Reissue independent claims over original patent**
110	18	210	9	**** Reissue claims in excess of 20 and over original patent**

SUBTOTAL (2) ($) 54.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge-late filing fee or oath	$
127	50	227	25	Surcharge-late provisional filing fee or cover sheet	$
139	130	139	130	Non-English specification	$
147	2,520	147	2,520	For filing a request for reexamination	$
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	$
113	1,840 *	113	1,840*	Requesting publication of SIR after Examiner action	$
115	110	215	55	Extension for reply within first month	$
116	390	216	195	Extension for reply within second month	$
117	890	217	445	Extension for reply within third month	$
118	1,390	218	695	Extension for reply within fourth month	$
128	1,890	228	945	Extension for reply within fifth month	$
119	310	219	155	Notice of Appeal	$
120	310	220	155	Filing a brief in support of an appeal	$
121	270	221	135	Request for oral hearing	$
138	1,510	138	1,510	Petition to institute a public use proceeding	$
140	110	240	55	Petition to revive - unavoidable	$
141	1,240	241	620	Petition to revive - unintentional	$
142	1,240	242	620	Utility issue fee (or reissue)	$
143	440	243	220	Design issue fee	$
144	600	244	300	Plant issue fee	$
122	130	122	130	Petitions to the Commissioner	$
123	50	123	50	Petitions related to provisional applications	$
126	240	126	240	Submission of Information Disclosure Statement	$
581	40	581	40	Recording each patent assignment per property (Times number of properties)	$ 40.00
146	710	246	355	Filing a submission after final rejection (37 C F R §1.129(a))	$
149	710	249	355	For each additional invention to be examined (37 C F R §1 129(b))	$
				Other Fee (specify)_____	$
				Other Fee (specify)_____	$

** Reduced by Basic Filing Fee Paid **SUBTOTAL (3) $ 40.00**

SUBMITTED BY

Typed or Printed Name	Robert E. Bushnell, Esq.	Complete (if applicable) Reg. Number	27,774
Signature	*Robert E. Bushnell*	Date: 16 November 2000	Deposit Account User ID:

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TITLE OF THE INVENTION

SYSTEM AND METHOD FOR CONTROLLING A PRINTING DEVICE

CLAIM OF PRIORITY

This application makes reference to, incorporates the same herein, and claims all benefits accruing under 35 U.S.C. §119 from an application entitled *System and Method for Controlling a Printer* earlier filed in the Korean Industrial Property Office on 20 November 1999, and there duly assigned Serial No. 99-51744 by that Office.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a method for controlling a printing device, and more particularly, to a system and method for controlling a printing device, capable of enabling a specific user to temporarily occupy a specific cassette or a specific sheet output position under certain conditions during the process of driving a printing device connected to a plurality of user computers through a network, thus preventing specific contents from being undesirably printed by another user when the specific user prints the specific contents using printing sheets.

Description of the Related Art

In general, in outputting documents and drawings prepared by a working equipment such as a personal computer (PC) by a printing device, a plurality of PCs are simultaneously connected to

a printing device shared by a plurality of PC users through a network. A printing device generally includes a cassette and a sheet outputting unit. However, the number of PCs connected to the printing device is limited. Therefore, when the number of used PCs is large, the number of printing devices which must be connected to the PCs increases accordingly. This is disadvantageous in saving space.

A printing device including various cassettes for various sizes of sheets such as A5, A4, A3, and B5 and a plurality of sheet outputting units is provided in order to let more PCs share a printing device, to thus solve the above problem. When such a printing device is used, it is possible to save space and to let a plurality of PC users select cassettes and sheet outputting units that are required for each of the users, to thus let the plurality of PC users simultaneously output specific contents.

However, in a network where the printing device including a plurality of cassettes and sheet outputting units are used, when a user among the plurality of users connected to the printing device prints specific contents using a cassette and a sheet outputting unit among the plurality of cassettes and sheet outputting units of the printing device, other contents may be undesirably printed by another user.

For example, when there is a command from the user "B" that specific contents should be printed by occupying the cassette "A" and the sheet outputting unit "a" while the user "A" prints other contents by occupying the cassette "A" and the sheet outputting unit "a", the contents desired to be printed by the user "B" may be printed on the printing sheets of the user "A".

Since the contents to be printed should be reprinted, working efficiency is lowered and large amounts of printing sheets are wasted. Therefore, a new system for controlling the printing device is required for solving the above problems.

Exemplar of the art are U.S. Patent 5,299,296 issued to Padalino, et al. for *Multi-function Machine with Interleaved Job Execution*, U.S. Patent 6,026,258 issued to Fresk et al. for *Method for Temporarily Locking out Print Jobs on a Network Copier When Copier User Is Present*, U.S. Patent 5,220,674 issued to Morgan, et al. for *Local Area Print Server for Requesting and Storing Required Resource Data and Forwarding Printer Status Message to Selected Destination*, U.S. Patent 5,699,493 issued to Davidson, Jr., et al. for *Method and Apparatus for Providing Job Accounting Information to a Host Computer from a Printer*, U.S. Patent 5,819,015 issued to Martin, et al. for *Method and Apparatus for Providing Remote Printer Resource Management*, U.S. Patent 5,727,135 issued to Webb, et al. for *Multiple Printer Status Information Indication*, U.S. Patent 6,025,925 issued to Davidson, Jr., et al. for *Method and Apparatus for Providing Accounting Information to Host Computer from a Printer*. I have found that the art does not show an efficient way to avoid problems with undesirable printing by users on a shared printer.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a system and method for controlling a printing device, capable of letting a specific user temporarily occupy a specific cassette or a specific sheet output position under certain conditions during the process of driving a printing device connected to a plurality of user computers through a network, thus preventing other contents from being undesirably printed by another user when the specific user prints specific contents using printing sheets.

It is another object to avoid the undesirable printing by users on a shared printer.

It is still another object to have a way to identify a printing status of a shared printing device.

It is yet another object to process print commands and yet have a reliable way to avoid printing on undesirable printable media.

Accordingly, to achieve the above object, there is provided a system for controlling a printing device according to the present invention, including a printing device having a plurality of sheet storage units for storing sheets on which images will be formed and a plurality of sheet outputting units for outputting the sheets on which the images are formed; a manipulation panel having a display unit for displaying the print state and an input unit for inputting print setting conditions; a host computer for inputting the print setting conditions and giving a print command to output the work result of a user to the printing device; and a printing device controller having a host interface unit for interfacing the host computer, a manipulation panel interface unit for interfacing the manipulation panel, and a printing device interface unit for interfacing the printing device, the printing device controller for processing signals received through the interface units.

Further, a method for controlling the printing of the printing device controlling system having a printing device, a manipulating panel, a printing device controller, and a host computer according to the present invention, includes the steps of initializing a printing device controller and a printing device by applying electric power to the manipulation panel, the printing device controller, and the printing device; setting an exclusive use with respect to the cassette and the sheet outputting position of the printing device under predetermined set conditions, in response to an input from the manipulation panel or the host computer; and printing specific contents in the cassette and the sheet outputting position of the printing device that are set to be exclusively used, according to a print command from the host computer.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of this invention, and many of the attendant advantages thereof, will be readily apparent as the same becomes better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings in which like reference symbols indicate the same or similar components, wherein:

FIG. 1 shows the entire network according to the present invention;

FIG. 2A shows an example of displaying a print ready state by the display unit of the manipulation panel of FIG. 1;

FIG. 2B shows an example of displaying a print processing state of the display unit of the manipulation panel of FIG. 1;

FIG. 2C shows an example of an input by the manipulation panel of FIG. 1;

FIG. 2D shows an example of an input by the host computer of FIG. 1;

FIG. 3 is a flowchart for showing the controlling of a printing device according to the present invention;

FIG. 4 is a flowchart for showing the controlling of a step for setting a cassette in the flowchart of FIG. 3 in detail;

FIG. 5 is a flowchart for showing the controlling of a printing step in the flowchart of FIG. 3 in detail; and

FIG. 6 is a flowchart for showing the controlling of an exclusive user displaying step in the flowchart of FIG. 4 in detail.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The hardware of the system for controlling a printing device that can be used for the controlling of a printing device according to the present invention includes a host computer 1, a manipulation panel 2, a printing device controller 3, and a printing device 4, as shown in FIG. 1 where the structure of an entire network according to the present invention is shown. The host computer 1 may be a personal computer (PC), however, any device by which a user can prepare documents and drawings and output the preparation results to the printing device may be used as the host computer 1. The manipulation panel 2 includes a display unit for displaying a print state and an input unit for inputting print set conditions.

The printing device controller 3 includes a host interface unit for interfacing the host computer 1, a manipulation panel interface unit for interfacing the manipulation panel 2, a printing device interface unit for interfacing the printing device 4, and a central processing unit (CPU) with possibly a memory for processing various signals received through the interface units. The printing device 4 includes a plurality of sheet storage units such as cassettes and a plurality of sheet outputting means such as sheet outputting units.

In the present invention, not only the manipulation panel 2 but also the host computer 1 can input print setting conditions.

The manipulation panel 2 of FIG. 1 will be described with reference to FIGS. 2A through 2D.

FIGS. 2A and 2B show examples of displaying a print ready state and a print processing state by the display unit of the manipulation panel 2 according to the input by the manipulation panel 2 or the host computer 1, respectively.

The print state such as the print ready state and the print processing state are displayed on the display unit of the manipulation panel 2 by characters as shown in FIGS. 2A and 2B. The name of

the exclusive user and the exclusive cassette are also displayed by characters. Accordingly, users can easily know who is exclusively using which cassette.

FIGS. 2C and 2D show an example of an input by the manipulation panel 2 of FIG. 1 and an example of the input of exclusive use setting conditions by the host computer 1, respectively.

Referring to FIGS. 2C and 2D, the input unit of the manipulation panel 2 and the host computer each includes a cassette designating unit, a sheet output position designating unit, an exclusive use display column, an exclusive time designating unit, and a unit for designating the number of works or print jobs. Also, the input unit of the manipulation panel 2 further includes a user display column.

The exclusive user writes the specific cassette and the specific sheet outputting position, that are to be exclusively used in the designating units through input units such as the manipulation panel or a keyboard attached to the host computer. When the exclusive setting condition is time, the user writes the time in the exclusive time designating unit. When the exclusive setting condition is the number of works, the user writes the number of works in the unit for designating the number of works. The user writes predetermined marks showing that the designated specific cassette and specific sheet outputting position are exclusively used in the exclusive use display column. Also, the user writes the name of the exclusive user in the user display column of the input unit of the manipulation panel 2 so that other users can know who the exclusive user is.

When the user gives a print command using the host computer in a state where the exclusive use is set by the input unit of the manipulation panel 2 or the host computer 1, the printing device controller 3 controls the printing device so as to process the print command according to the set conditions.

Hereinafter, the controlling of the printing device will be described in more detail with reference to the attached drawings.

Referring to FIG. 3, in the controlling of the printing device according to the present invention, when the power supply is applied to a printing device system (the printing device controller 3, the manipulation panel 2, and the printing device 4) (step S1), the printing device controller 3 and the printing device 4 are initialized (step S2) and it is determined whether there is an input from the manipulation panel 2 or the host computer 1 (step S3). When it is determined that there is an input, it is determined whether there are functions required by the user (steps S4 and S6). Although it is shown that there are two determinations as to whether there are the functions or not (the steps S4 and S6) in FIG. 3, it should be noted that the number of determinations is not limited thereto, but is corresponding to the total functions required by the user. When it is determined that there are the functions in the steps S4 and S6, the functions are set (steps S5 and S7). When it is determined that there are no functions required by the user or when it is determined that there are the functions required by the user and that the functions are set accordingly, it is determined whether an exclusive use is to be set with respect to the cassette (step S8). When it is determined that the exclusive use is to be set with respect to the cassette, the corresponding cassette is set for exclusive use (step S9). When it is determined that the exclusive use is not set with respect to the cassette or when the corresponding cassette is set to be exclusively used, it is determined whether an exclusive use is to be set with respect to a sheet outputting position (step S10). When it is determined that the exclusive use is to be set with respect to the sheet outputting position, the corresponding sheet outputting position is set for exclusive use (step S11). When it is determined that the exclusive use is not set with respect to the sheet outputting position or when the corresponding sheet outputting

position is set to be exclusively used, the process proceeds to a step S12 for determining whether there is a print command. As mentioned above, in the step (S9) of setting the corresponding cassette to be exclusively used and the step (S11) of setting the corresponding sheet outputting position to be exclusively used, the exclusive user who can temporarily occupy a specific cassette or a specific sheet outputting position under certain conditions, is set.

A method for controlling the setting of the exclusive user in the step (S9) of setting the corresponding cassette to be exclusively used will be described in detail with reference to FIG. 4.

When the controlling of the printing device by the manipulation panel 2 or the host computer 1 is set, it is determined whether the print command is received from the host computer (step S12). When it is determined that the print command is not received from the host computer, the step (S3) of determining whether there is an input from the manipulation panel or the host computer through the step (S11) of setting the corresponding sheet outputting position to be exclusively used are repeated. When it is determined that the print command is received from the host computer in the step S12, data (documents and drawings) transmitted from the host computer are printed (step S13).

A method for controlling the setting of the exclusive user in the printing step (S13) will be described later with reference to FIG. 5.

Meanwhile, when a certain period of time elapses after the completion of the printing, the exclusive use setting is automatically canceled, and accordingly, the printingcan be performed by the next user.

Now, the method for controlling the setting of the exclusive user in the step (S9) of setting the corresponding cassette to be exclusively used in FIG. 3 will be described. FIG. 4 is a detailed flowchart showing the controlling of the step (S9) of setting the corresponding cassette to be

exclusively used. Step S9 is included in the flowchart of FIG. 3 showing the controlling of the printing device.

In the controlling of the step of setting the corresponding cassette to be exclusively used, a cassette is designated (step S9-1) and it is determined whether the designated cassette is set to be exclusively used by another user (step S9-2). When it is determined that the designated cassette is set to be exclusively used by another user, the word "unusable" is displayed on the display unit of the manipulation panel 2 (step S9-3). Instead of displaying "unusable", it is possible to display "next exclusive user designation stand-by" on the display unit of the manipulation panel 2 in order to announce that the next exclusive user is awaiting to print data after the current exclusive user completes printing data. After displaying "unusable" or "next exclusive user designation stand-by" on the display unit of the manipulation panel 2 in the step S9-3, it is determined whether the cassette is re-designated (step S9-4). When it is determined that the cassette is re-designated, the process returns to the step S9-1 and the cassette is reset. When it is determined that the cassette is not re-designated, the process proceeds to a step S9-13 and the setting of the cassette is completed.

When it is determined that the designated cassette is not set to be exclusively used by another user in the step S9-2, it is determined whether an exclusive user is designated (step S9-5). When it is determined that the exclusive user is not designated, the process proceeds to the step S9-13 and the setting of the cassette is completed. When it is determined that the exclusive user is designated, it is determined whether the designated cassette is a basic (or default) cassette (step 9-6). When it is determined that the designated cassette is the basic cassette, the process returns to the step S9-3 and "unusable" is displayed on the display unit of the manipulation panel 2. When it is determined that the designated cassette is not the basic cassette, the exclusive user is designated (step S9-7) and

it is determined whether the exclusive use condition is set by the time (step S9-8). When it is determined that the exclusive use condition is set by the time, the setting of the cassette is completed (step S9-13) after inputting the exclusive use time (step S9-9), starting to operate a timer (step S9-10), and displaying the exclusive user (step S9-12). When it is determined that the exclusive use condition is not set by the time, the setting of the cassette is completed (the step S9-13) after inputting the number of exclusive use works (step S9-11) and displaying the exclusive user (step S9-12).

Since the controlling of the step of setting the corresponding sheet outputting position to be exclusively used in FIG. 3 is performed in the same way as that in FIG. 4, the description thereof will be omitted.

Referring to FIG. 5, the method for controlling the setting of the exclusive user in the printing step (S13) of FIG. 3 will be described in detail. In the process of FIG. 3, the print command is received from the host computer and it is determined whether the exclusive user is designated with respect to the cassette or the sheet outputting position (step S13-1). When it is determined that the exclusive user is not designated with respect to the cassette or the sheet outputting position, the printing is completed (step S13-6) after processing the host data (step S13-4) and transmitting print data, which is the processed result, to the printing device (step S13-5). When it is determined that the exclusive user is designated with respect to the cassette or the sheet outputting position in the step S13-1, it is determined whether the exclusive use condition is set by the number of works (step S13-2). When it is determined that the exclusive use condition is set by the number of works, the working coefficient for counting the number of prosecuted works is increased by one (step S13-3) and the process proceeds to the steps S13-4 through S13-6.

Referring to FIG. 6, the method for controlling the setting of the exclusive user in the step of displaying the exclusive user (S9-12) in the flowchart of FIG. 4 will be described in detail. In the displaying of the exclusive user in FIG. 4, it is determined whether the exclusive use condition is set by the time (step S9-12-1). When it is determined that the exclusive use condition is set by the time, it is determined whether the used time exceeds the designated time (step S9-12-2). When it is determined that the used time exceeds the designated time, the displaying of the exclusive user is completed (step S9-12-7) after setting the cassette or the sheet outputting position to be basic, stopping the timer, and removing the marks on the display unit that are related to the exclusive user (step S9-12-6). When it is determined that the used time does not exceed the designated time in the step S9-12-2, the exclusive user and items set with respect to the exclusive user are displayed on the display unit of the manipulation panel (step S9-12-3) and the process returns to the step S9-12-1, thus repeating to display the exclusive user. When it is determined that the exclusive use condition is not set by the time in the step S9-12-1, it is determined whether the number of works exceeds a designated value (step S9-12-4). When it is determined that the number of works exceeds the designated value, the displaying of the exclusive user is completed (step S9-12-7) after setting the cassette and/or the sheet outputting position to be basic, stopping the timer, and removing marks on the display unit which are related to the exclusive user (step S9-12-6). When it is determined that the number of works does not exceed the designated value in the step S9-12-4, the exclusive user and the items set with respect to the exclusive user are displayed on the display unit of the manipulation panel (S9-12-5) and the process returns to the step S9-12-1, thus repeating the displaying process until the displaying of the exclusive user is completed.

According to the method for controlling the printing device according to the present invention, it is possible to let a specific user exclusively use a specific cassette or a specific sheet outputting position under certain conditions during the process of driving the printing device, to thus prevent the contents of another user from being erroneously printed during a printing operation. Therefore, since it is not necessary to perform reprinting due to printing errors, it is possible to improve working efficiency and to save printing sheets.

While this invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A system controlling a printing device, comprising:

said printing device including a plurality of sheet storage unit storing sheets on which images will be formed and a plurality of sheet outputting units outputting the sheets on which the images are formed;

a manipulation panel including a display unit displaying a print state and an input unit inputting print setting conditions;

a host computer inputting the print setting conditions and giving a print command to output the work result of a user to said printing device; and

a printing device controller including a host interface unit interfacing said host computer, a manipulation panel interface unit interfacing said manipulation panel, and a printing device interface unit interfacing said printing device, said printing device controller processing signals received through the interface units.

2. The system of claim 1, with the display unit displaying a print state, a name of an exclusive user, and an exclusive cassette, the exclusive user being the only user performing a print on said printing device, an exclusive cassette being the sheet storage unit used exclusively by the exclusive user.

3. The system of claim 1, with said input unit including a cassette designating unit, a sheet output position designating unit, an exclusive use di splay column, an exclusive time designating unit, a unit designating a number of print jobs, and a user display panel.

4. The system of claim 3, with said printing device controller processing a command from said host computer or the manipulation panel and controlling said printing device to process the print command according to set conditions.

5. A method for controlling the printing of a printing device controlling system, comprising the steps of:

initializing a printing device controller of a printing device controlling system and a printing device by applying an electric power to a manipulation panel, the printing device controller, and the printing device, the printing device controlling system including the printing device, a manipulating panel, the printing device controller, and a host computer;

setting an exclusive use with respect to a cassette and a sheet outputting position of the printing device under a predetermined set condition, in response to an input from the manipulation panel or the host computer; and

printing specific contents in the cassette and the sheet outputting position of the printing device that are set to be exclusively used, according to a print command from the host computer.

6. The method of claim 5, with said set condition being a time in said step of setting the exclusive use.

7. The method of claim 5, with said set condition being a number of works in the step of setting the exclusive use.

8. The method of claim 5, with said step of setting the exclusive use comprising displaying a symbol signifying the printing device being unusable on the display unit of the manipulation panel when an exclusive user is designated.

9. The method of claim 5,with said step of setting the exclusive use comprising displaying a symbol representing a next user designation stand-by on the display unit of the manipulation panel when the exclusive user is designated.

10. The method of claim 5, further comprising the step of canceling the exclusive use setting when a certain period of time elapses after the completion of a printing operation set by the exclusive user.

11. A method, comprising:

applying power to a printing device system, said printing device system including a printing device controller, manipulation panel, a printing device, and a host computer, said printing device including a plurality of sheet storage units and a plurality of sheet outputting position units, each one of the sheet storage units storing a same type of printable medium, each one of the sheet outputting position units outputting the printable medium having images generated by said printing device;

initializing said printing device controller and said printing device;

determining whether there is an input from said manipulation panel or said host computer;

determining whether the input is a function required by a user when there is an input from said manipulation panel or said host computer;

determining whether the function is an exclusive use with respect to the sheet storage unit when the input is determined to be a function required by a user;

setting the group of printable medium to be used exclusively when the function is determined to be an exclusive use with respect to the sheet storage unit;

determining whether an exclusive use is to be set with respect to a sheet outputting position unit when it is determined that the exclusive use is not set with respect to the sheet storage unit or when the sheet storage unit is set to be exclusively used;

setting the corresponding sheet outputting position unit to be exclusively used when it is determined that exclusive use is to be set with respect to the sheet outputting position unit;

determining whether there is a print command when it is determined that the exclusive use is not set with respect to the sheet outputting position unit or when the corresponding sheet outputting position unit is set to be exclusively used; and

printing data transmitted from the host computer when it is determined that the print command is received.

12. The method of claim 11, further comprising a step of setting the function when it is determined the input is a specific function required by the user.

13. The method of claim 12, with said step of setting the sheet storage unit to be used exclusively, further comprising the steps of:

designating at least one of the sheet storage units;

determining whether the designated sheet storage unit is set to be exclusively used by another user;

displaying a symbol showing the designated sheet storage unit being unusable or in a standby mode to any user other than the user exclusively using the sheet storage unit; and

determining whether sheet storage unit is re-designated to another user.

14. The method of claim 13, further comprising the steps of:

resetting the sheet storage unit when it is determined that the sheet storage unit is re-designated; and

setting the sheet storage unit when the sheet storage unit is not re-designated.

15. The method of claim 14, further comprising the steps of:

determining whether an exclusive user is designated when it is determined that the designated sheet storage unit is not set to be exclusively used by another user;

determining whether the designated sheet storage unit is a basic sheet storage unit;

displaying a symbol showing the basic sheet storage unit being unusable;

designating the exclusive user when designated sheet storage unit is not the basic sheet storage unit;

determining whether the exclusive use is conditioned by time; and

setting the sheet storage unit when the exclusive use is conditioned by time.

16. The method of claim 15, further comprising the steps of:

inputting an exclusive use time when the exclusive use condition is determined to be set by time;

starting to operate a timer after inputting the exclusive use time; and

displaying the exclusive user.

17. The method of claim 15, further comprising the steps of:

inputting a number of exclusive use works when the exclusive use condition is not determined to be set by time, the exclusive use works being a group of exclusive print jobs; and

displaying the exclusive user after inputting the number of exclusive use works.

18. The method of claim 16, with said step of displaying the exclusive user further comprising the steps of:

determining whether the exclusive use condition is set by time;

determining whether an exclusive use time exceeds the designated exclusive use time when the exclusive use condition is set by time;

setting the sheet storage unit or the sheet outputting position unit to be basic, stopping the timer, and removing the display related to the exclusive user when exclusive use time exceeds the designated exclusive use time;

displaying the exclusive user and related data when elapsed time does not exceed designated exclusive use time;

updating continually data relating to exclusive user until the exclusive use time exceeds the designated exclusive use time; and

displaying the exclusive user when elapsed time exceeds the designated exclusive use time.

19. The method of claim 18, further comprising:

determining whether the number of works exceeds a designated value when the exclusive use condition is not set by the time;

setting the sheet storage unit, or setting the sheet outputting position unit as default when the number of works exceeds the designated value;

stopping the timer and removing display of the exclusive user when the number of works exceeds the designated value; and

displaying the exclusive user when the number of works does not exceed the designated value and repeating said step of determining whether the exclusive use condition is set by time until the displaying of the exclusive user is completed.

20. The method of claim 19, further comprising the step of cancelling automatically the exclusive use setting when a certain period of time elapses after completion of printing, said step of cancelling allowing a next user to print.

21. The method of claim 19, with said step of printing data further comprising the steps of:

determining whether the exclusive user is not designated with respect to the sheet storage unit or the sheet outputting position unit;

completing the printing when exclusive user is not designated with respect to the sheet storage unit or the sheet outputting position unit;

determining whether the exclusive use condition is set by the number of works when the exclusive user is designated with respect to the sheet storage unit or sheet outputting position unit;

increasing a work coefficient accommodating counting the number of completed works when the exclusive use condition is set by the number of works; and

completing the printing of data on printable medium after the work coefficient is increased.

22. The method of claim 21, with said displaying of data being made on a display unit of said manipulation panel.

23. The method of claim 11, with said step of printing data further comprising the steps of:

determining whether the exclusive user is not designated with respect to the sheet storage unit or the sheet outputting position unit;

completing the printing when exclusive user is not designated with respect to the sheet storage unit or the sheet outputting position unit;

determining whether the exclusive use condition is set by the number of works when the exclusive user is designated with respect to the sheet storage unit or sheet outputting position unit;

increasing a work coefficient accommodating counting the number of completed works when the exclusive use condition is set by the number of works; and

completing the printing of data on printable medium after the work coefficient is increased.

ABSTRACT OF THE DISCLOSURE

A system for controlling a printing device, capable of letting a specific user temporarily occupy a specific cassette or a specific sheet output position under certain conditions during the process of driving a printing device connected to a plurality of user computers through a network, thus preventing specific contents from being undesirably printed by another user when the specific user prints the specific contents using printing sheets, and a method therefor are provided, including the steps of initializing a printing device controller and a printing device by applying electric power to a manipulation panel, a printing device controller, and a printing device; setting an exclusive use with respect to the cassette and the sheet outputting position of a printing device under predetermined set conditions, in response to an input from the manipulation panel or the host computer; and printing specific contents in the cassette and the sheet outputting position of the printing device which are set to be exclusively used, according to a print command from the host computer. The time or the number of works are set to be exclusive use conditions. According to the print controlling method, since it is not necessary to perform reprinting due to print errors, it is possible to improve working efficiency and to save printing sheets.

FIG. 1

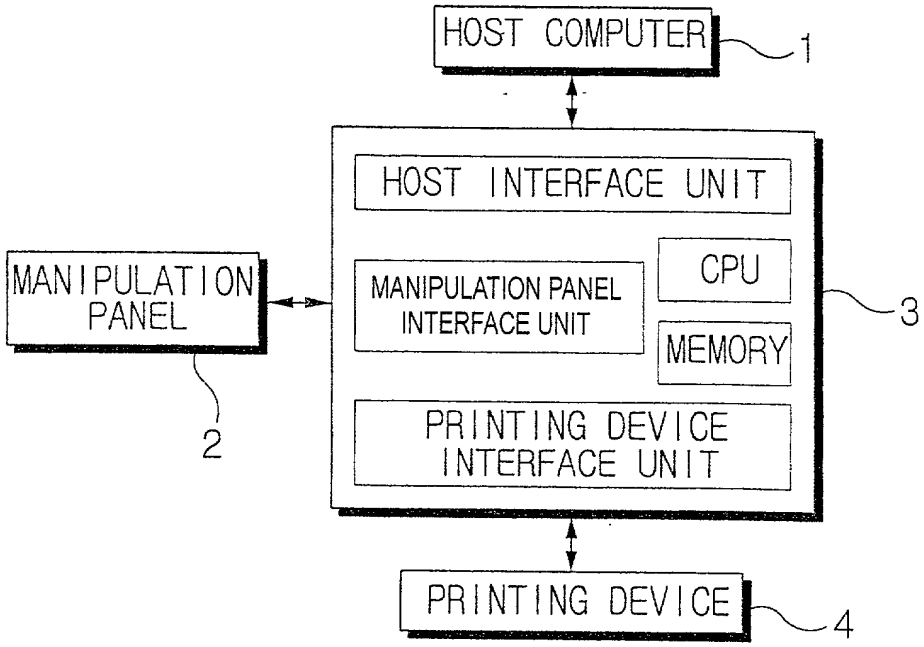


FIG. 2A

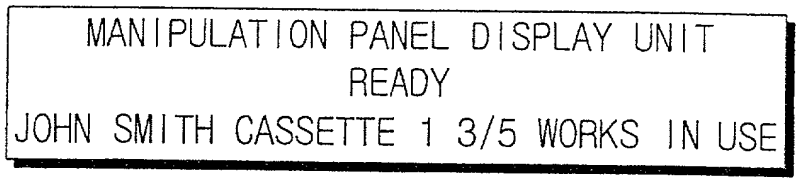


FIG. 2B

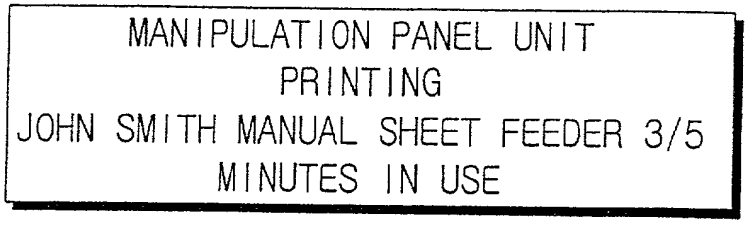


FIG.2C

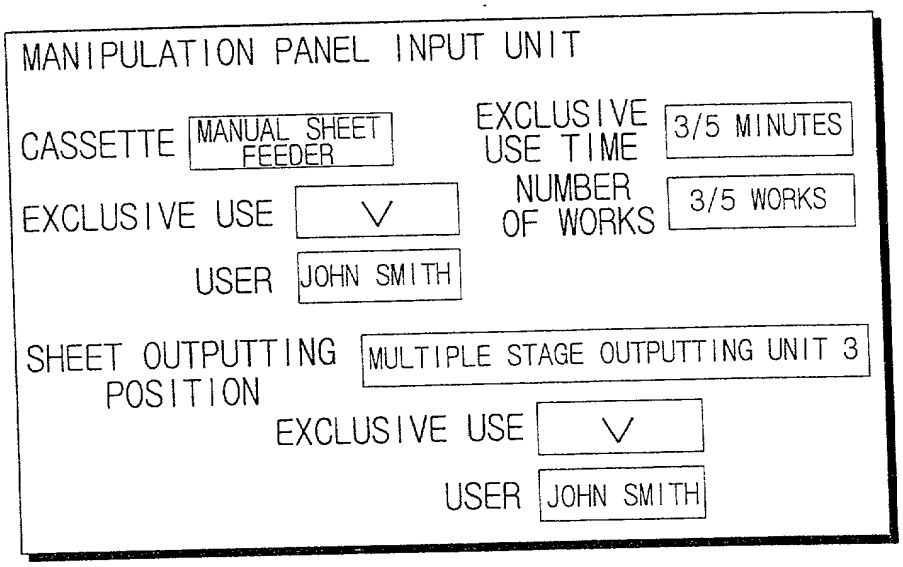

MANIPULATION PANEL INPUT UNIT
CASSETTE
MANUAL SHEET FEEDER
EXCLUSIVE USE TIME
3/5 MINUTES
EXCLUSIVE USE
NUMBER OF WORKS
3/5 WORKS
USER
JOHN SMITH
SHEET OUTPUTTING POSITION
MULTIPLE STAGE OUTPUTTING UNIT 3
EXCLUSIVE USE
USER
JOHN SMITH

FIG.2D

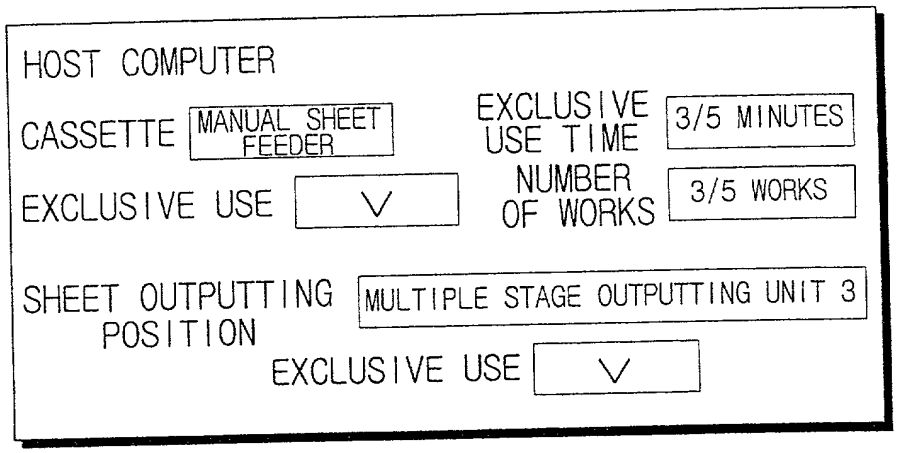

HOST COMPUTER
CASSETTE
MANUAL SHEET FEEDER
EXCLUSIVE USE TIME
3/5 MINUTES
EXCLUSIVE USE
NUMBER OF WORKS
3/5 WORKS
SHEET OUTPUTTING POSITION
MULTIPLE STAGE OUTPUTTING UNIT 3
EXCLUSIVE USE

FIG.3

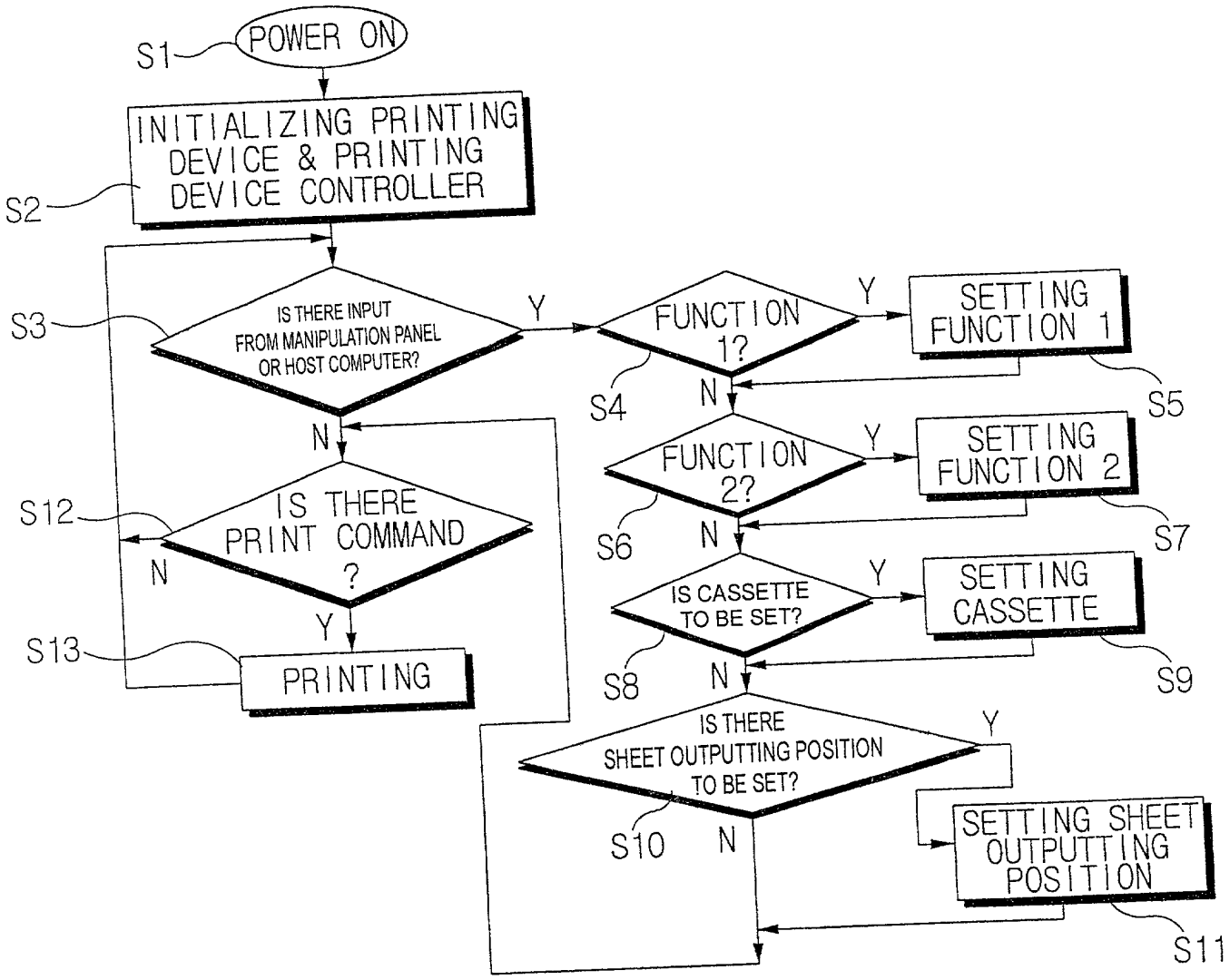

S1
POWER ON
INITIALIZING PRINTING DEVICE & PRINTING DEVICE CONTROLLER
S2
S3
IS THERE INPUT FROM MANIPULATION PANEL OR HOST COMPUTER?
Y
N
FUNCTION 1?
S4
Y
SETTING FUNCTION 1
S5
N
FUNCTION 2?
S6
Y
SETTING FUNCTION 2
S7
N
IS CASSETTE TO BE SET?
S8
Y
SETTING CASSETTE
S9
N
IS THERE SHEET OUTPUTTING POSITION TO BE SET?
S10
Y
SETTING SHEET OUTPUTTING POSITION
S11
N
IS THERE PRINT COMMAND ?
S12
N
Y
PRINTING
S13

FIG.4

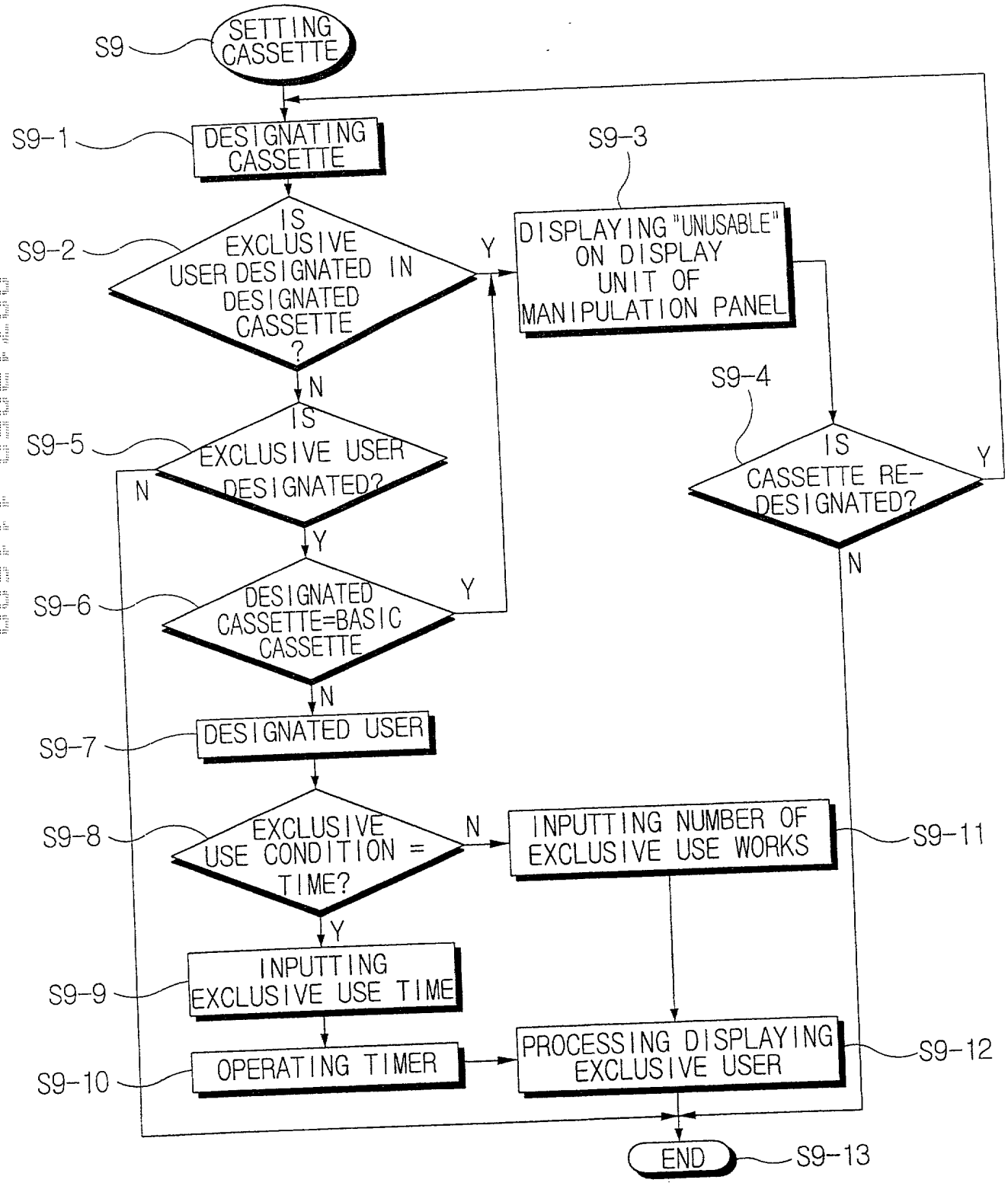

S9
SETTING CASSETTE
S9-1
DESIGNATING CASSETTE
S9-2
IS EXCLUSIVE USER DESIGNATED IN DESIGNATED CASSETTE ?
Y
N
S9-3
DISPLAYING "UNUSABLE" ON DISPLAY UNIT OF MANIPULATION PANEL
S9-4
IS CASSETTE RE-DESIGNATED?
Y
N
S9-5
IS EXCLUSIVE USER DESIGNATED?
N
Y
S9-6
DESIGNATED CASSETTE=BASIC CASSETTE
Y
N
S9-7
DESIGNATED USER
S9-8
EXCLUSIVE USE CONDITION = TIME?
N
Y
S9-11
INPUTTING NUMBER OF EXCLUSIVE USE WORKS
S9-9
INPUTTING EXCLUSIVE USE TIME
S9-10
OPERATING TIMER
S9-12
PROCESSING DISPLAYING EXCLUSIVE USER
END
S9-13

FIG.5

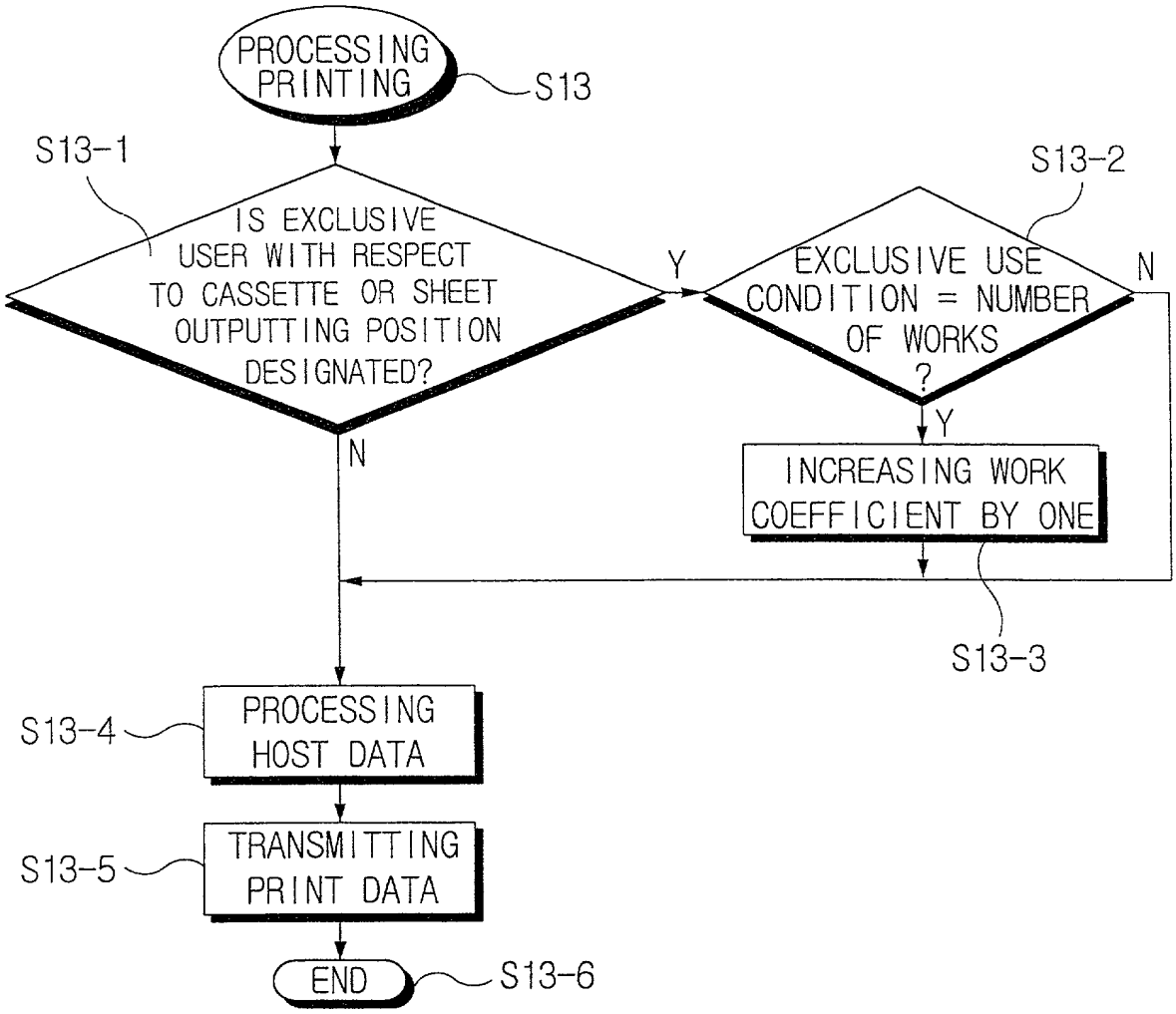
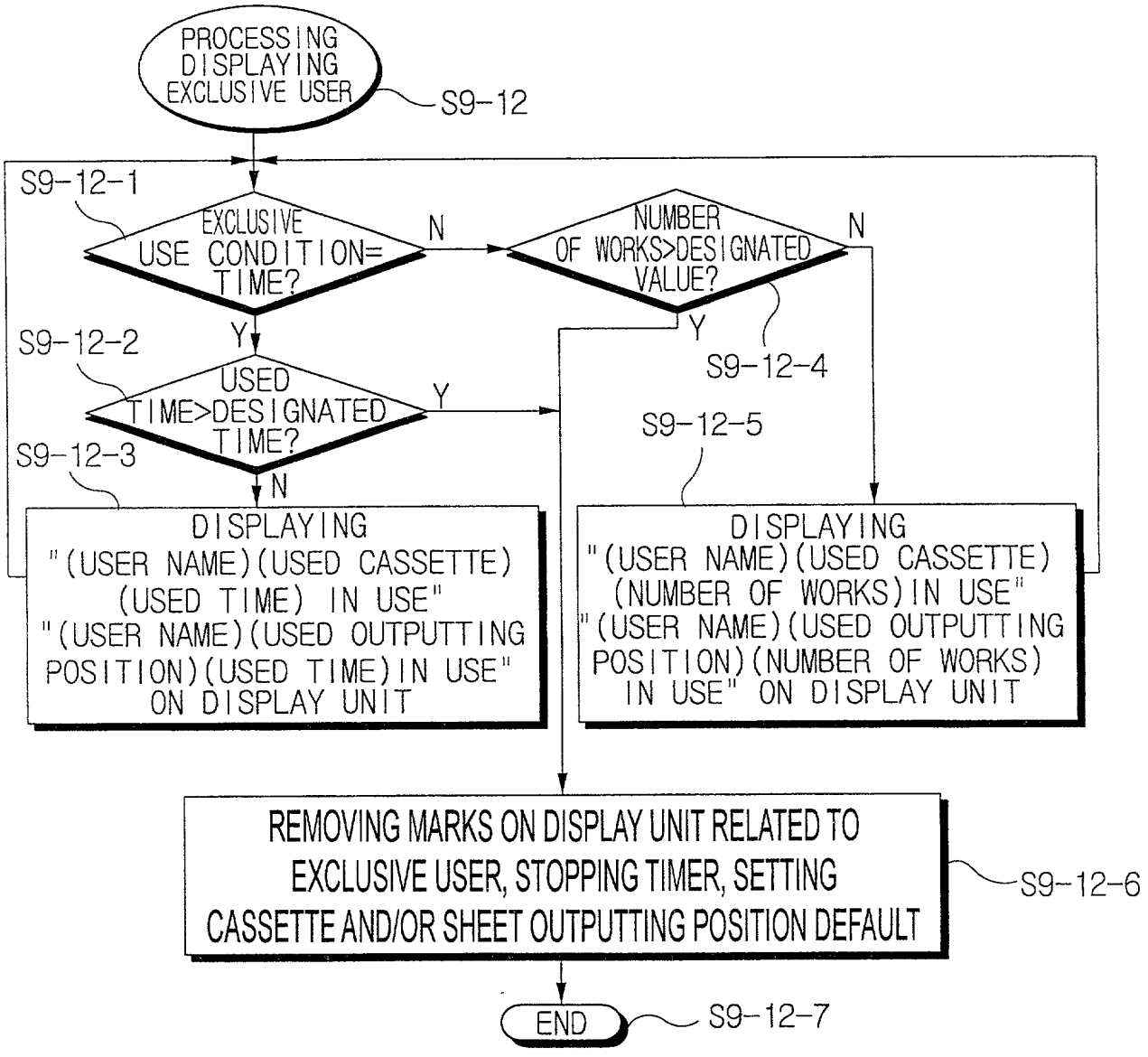

PROCESSING PRINTING
S13
S13-1
IS EXCLUSIVE USER WITH RESPECT TO CASSETTE OR SHEET OUTPUTTING POSITION DESIGNATED?
Y
N
S13-2
EXCLUSIVE USE CONDITION = NUMBER OF WORKS ?
Y
N
INCREASING WORK COEFFICIENT BY ONE
S13-3
S13-4
PROCESSING HOST DATA
S13-5
TRANSMITTING PRINT DATA
END
S13-6

FIG.6


PROCESSING DISPLAYING EXCLUSIVE USER
S9-12
S9-12-1
EXCLUSIVE USE CONDITION= TIME?
N
NUMBER OF WORKS>DESIGNATED VALUE?
N
Y
Y
S9-12-4
S9-12-2
USED TIME>DESIGNATED TIME?
Y
S9-12-5
S9-12-3
N
DISPLAYING "(USER NAME)(USED CASSETTE) (USED TIME) IN USE" "(USER NAME)(USED OUTPUTTING POSITION)(USED TIME)IN USE" ON DISPLAY UNIT
DISPLAYING "(USER NAME)(USED CASSETTE) (NUMBER OF WORKS)IN USE" "(USER NAME)(USED OUTPUTTING POSITION)(NUMBER OF WORKS) IN USE" ON DISPLAY UNIT
REMOVING MARKS ON DISPLAY UNIT RELATED TO EXCLUSIVE USER, STOPPING TIMER, SETTING CASSETTE AND/OR SHEET OUTPUTTING POSITION DEFAULT
S9-12-6
END
S9-12-7

PATENT
P56107

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

WOON-IL KIM

Serial No.:	*To Be Assigned*	Examiner:	*To Be Assigned*
Filed:	16 November 2000	Art Unit:	*To Be Assigned*

For: SYSTEM AND METHOD FOR CONTROLLING A PRINTING DEVICE

TRANSMITTAL OF DECLARATION

The Assistant Commissioner
of Patents
Washington, D.C. 20231

Sir:

Accompanying this transmittal is a Declaration for the above-referenced application.

Respectfully submitted,

Robert E. Bushnell
Reg. No.: 27,774
Attorney for the Applicant

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Folio: P56107
Date: 11/16/00
I.D.: REB/sys

DECLARATION

PTO/SB/01(6/95) Docket No. P56107

AS A BELOW NAMED INVENTOR, I hereby declare that .

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole(if only one name is listed below), or an original, first and joint inventor(if plural name are listed below), of the subject matter which is claimed and for which a patent is sought on the invention entitled·

TITLE: ***SYSTEM AND METHOD FOR CONTROLLING A PRINTING DEVICE***

the specification of' which either is attached hereto or otherwise accompanies this Declaration, or:

☐ was filed in the U S. Patent & Trademark Office on _____ and assigned Serial No._____

☐ and (if applicable) was amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations §1 56 I hereby claim foreign priority benefits under Title 35, U.S. Code §119 (a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed

			Priority Claimed:
51744/1999	**Republic of Korea**	**20 November 1999**	Yes[X] No[ ]
(Application Number)	*(Country)*	*(Day/Month/Year filed)*	
			Yes[ ] No[ ]
(Application Number)	*(Country)*	*(Day/Month/Year filed)*	

☐

☐

I hereby claim the benefit under Title 35, U.S. Code, §120, of any United States application(s), or §365(c)of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, The Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

☐

_____

(Application Serial No) *(Filing Date)* *(STATUS : patented, pending, abandoned)*

_____

(Application Serial No) *(Filing Date)* *(STATUS : patented, pending, abandoned)*

I hereby appoint the following attorneys: Robert E. Bushnell, Reg. No.27,774, and Michael D. Parker, Reg. No. 34,973, to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of 'appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

Robert E. Bushnell,
Attorney-at-Law
Suite 300, 1522 K Street, N.W.
Washington, D.C. 20005-1202

Payer No. 008439
Area Code: 202-408-9040

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of 'Title 18 U.S Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF FIRST OR SOLE INVENTOR· **WOON-IL KIM** Citizenship : **KOREAN**

inventor's signature. Woon il Kim. Date. November 7, 2000

Residence & Post Office Address· **316-508, Hanshin 10th Apartment, Chamwon-dong, Seocho-gu, Seoul, Republic of Korea**

FULL NAME OF SECOND OR SOLE INVENTOR· _____ Citizenship : _____

inventor's signature _____ Date· _____

Residence & Post Office Address

☐additional inventors are being named on separately numbered sheets attached hereto.